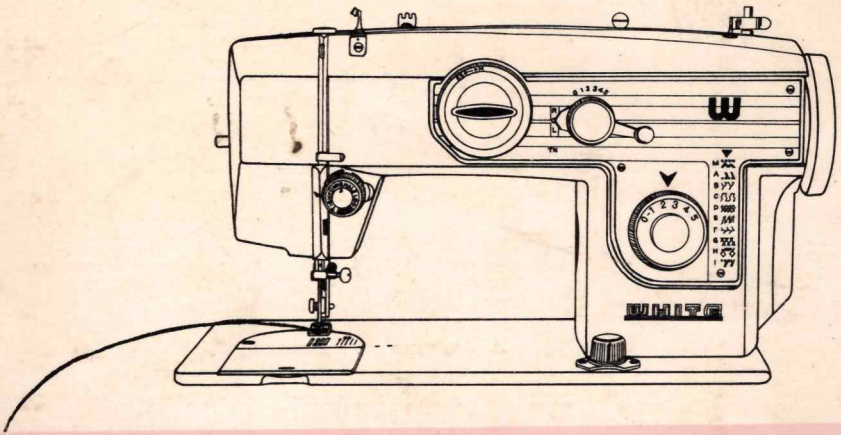

How To Use and Care For Your WHITE

Zigzag Sewing Machine

MODEL 656

You are now the owner of a new zigzag sewing machine, the most versatile type of its kind you can possess.

Buttonholes, monogramming, overcasting and creative embroidery are done with ease and speed.

To aid you in obtaining the greatest performance from your new WHITE this book on its care and use has been written for you. Read the instructions carefully as a thorough understanding of your machine will reward you with many hours of trouble free, creative sewing.

Time-saving attachments such as rufflers, binders, edgestitchers, cording feet and others to complement the accessories furnished with your WHITE are available from the store where you purchased your machine.

WHITE SEWING MACHINE COMPANY

Cleveland, Ohio 44111

WHITE CONSOLIDATED INDUSTRIES, LTD.

Toronto, Ontario, Canada

WARRANTY WHITE sewing machines CERTIFICATE

SINCE 1876

WE WARRANT to the original purchaser of this new White Sewing Machine (serial number entered on reverse side) that it is built of first class materials and workmanship. Should any part of this sewing mechanism (excepting needles, pulleys, belts, attachments or electrical equipment) be found defective within twenty (20) years from date of purchase, it will be exchanged for a new part, providing only that the machine is used under normal household conditions and not damaged by tinkering, fire, water or accident.

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ELECTRICAL EQUIPMENT is warranted in accordance with the standard practices covering household electrical equipment and appliances, i.e., the exchange of any defective electrical part (excepting lamp bulbs) for a period of one year from date of original purchase.

THIS WARRANTY is valid only if signed by an authorized White Sewing Machine dealer after the serial number of the machine and date of purchase have been entered in the spaces provided.

This warranty is in lieu of any other warranties, express or implied, and the obligation under this warranty shall not include any liability for direct, indirect or consequential damages.

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CLEVLAND, OHIO
WHITE CONSOLIDATED INDUSTRIES LTD.
TORONTO, CANADA

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SCARBOROUGH, ONTARIO, CANADA

WARRANTY **WHITE** *sewing* SINCE 1876 *machines* REGISTRATION

Please register the following listed White Sewing Machine under the terms of your warranty. I understand this warranty becomes effective from the date of purchase as shown below.

MODEL NUMBER 656		SERIAL NUMBER
PURCHASED FROM		DATE OF PURCHASE
DID YOU TRADE IN A MACHINE?	WHAT MAKE?	HOW OLD WAS IT?
PURCHASERS NAME		
ADDRESS		
CITY		

RETURN THIS CARD

Warranty Certificate and Registration for

WHITE *sewing* SINCE 1876 *machines*

NAME OF ORIGINAL PURCHASER		DATE OF PURCHASE
MODEL NUMBER 656	SERIAL NUMBER	
AUTHORIZED DEALER SIGNATURE		

SERVICE POLICY

DATE OF PURCHASE 7-11-78 BRAND White

COMPLETE MODEL NO. 656 SERIAL NO. 7779

Expert service for the sewing machine described above is available by the undersigned dealer.

Standard charges for service at store, if machine is brought in, are considerably less than home calls.

Service without charge for 1 yr days from date written above, and on dealer record, is due original purchaser if required.

DEALER White Sewg

CITY and STATE OKC

SIGNED Ken Bullock TITLE SALES

THIS PORTION TO BE RETAINED BY CUSTOMER

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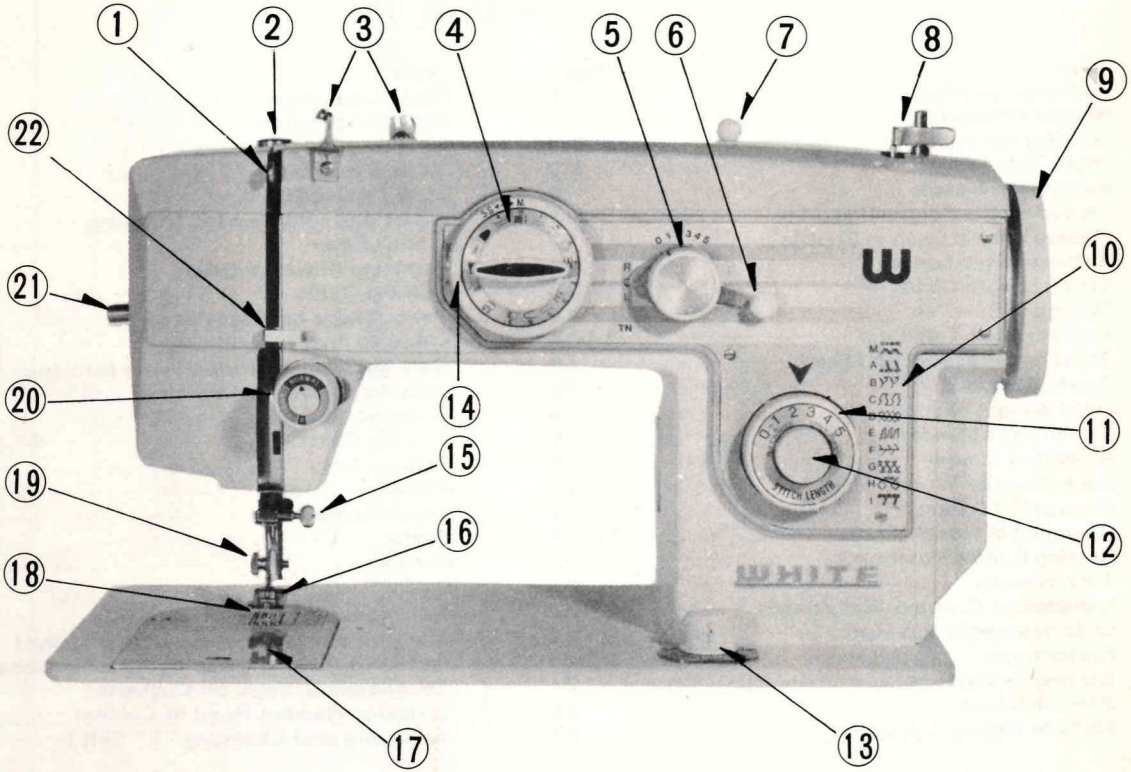
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STITCH LENGTH
WHITE

Fig. 1

FEATURES AND PARTS

(Front View)

① Take up Lever
② Pressure Release (Darning)
③ Arm Thread Guides
④ Pattern Selector Dial
⑤ Zigzag Stitch Width Control
⑥ Needle Position Control
⑦ Reverse Stitch Adjustment
⑧ Bobbin Winder
⑨ Hand Wheel
⑩ Stretch stitch pattern
⑪ Stitch Length Control
⑫ Reverse Control
⑬ Drop Feed Control
⑭ Stretch control dial
⑮ Needle Clamp Screw
⑯ Presser Foot
⑰ Cover Plate
⑱ Needle Plate
⑲ Attachment and Foot Thumb Screw
⑳ Tension
㉑ Sew Lite Switch
㉒ Thread Guide

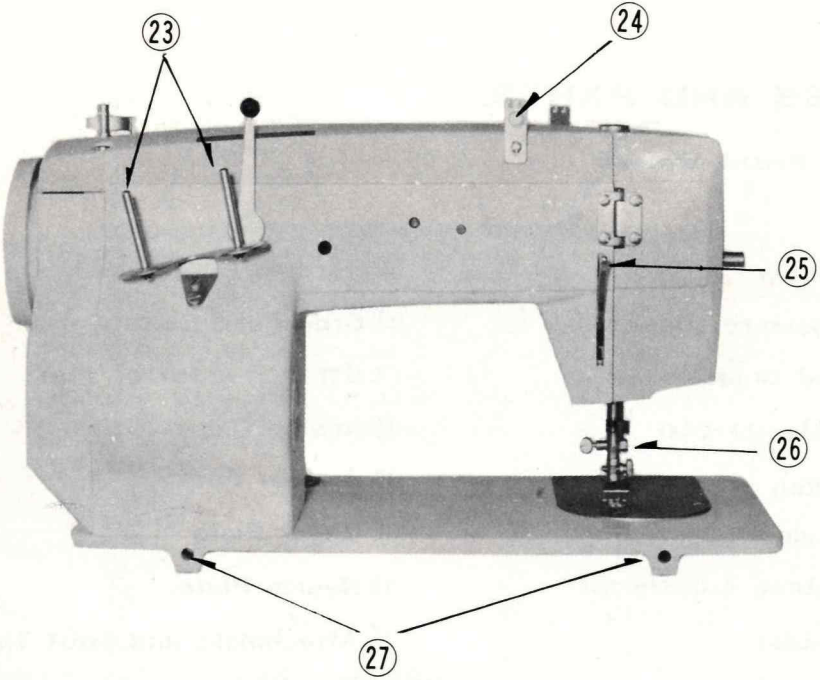


Fig. 2

㉓ **Spool Pins**

㉔ **Bobbin Winder Tension**

㉕ **Presser Bar Lifter**

㉖ **Thread Cutter**

㉗ **Head Hinge Mounting Holes**

NEEDLE-THREAD-FABRIC-STITCHING GUIDE

Fabric	Needle No	Machine Stitches Per Inch	Cotton Thread	Mercerized Thread	Silk or Nylon
Extremely heavy tarpaulin, sacking, canvas, duck, etc.	4	6 to 8	10 to 30	Heavy Duty	
Heavy upholstery fabric, ticking, denim, leatherette	3 (18)	8 to 10	30 to 40	Heavy Duty	
Medium heavy drapery fabric, velveteen, suiting, felt, terry, etc.	2 (16)	10 to 12	40 to 60	Heavy Duty	
Medium broadcloth, percale, gingham, linen, chintz, taffeta, sheer wool, shantung, etc.	1 (14)	12 to 14	60 to 80	50	A
Sheer voile, lawn, dimity, crepe, handkerchief linen, plastic film, etc.	0 (11)	14 to 16 (Plastic film) 8 to 10	80 to 100	50	A
Very sheer chiffon, batiste, lace, organdy, nylon, net, marquisette, etc.	00	16 to 20	100 to 150	50	A

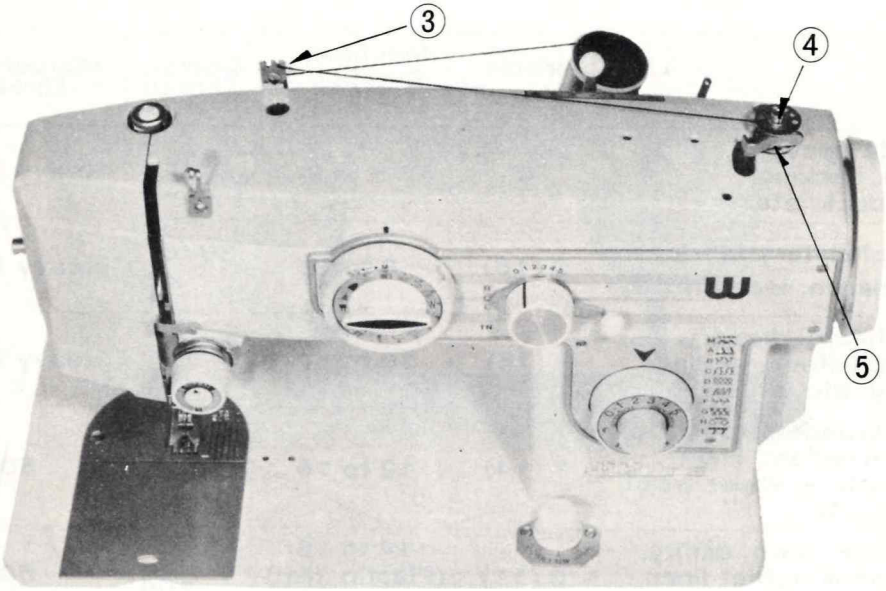


Fig. 3

WINDING THE BOBBIN

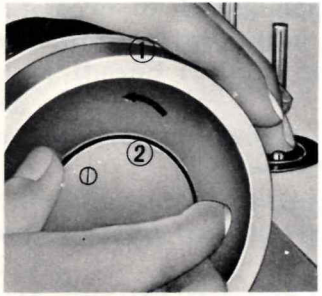


Fig. 4

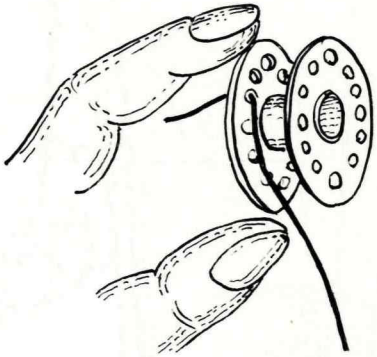
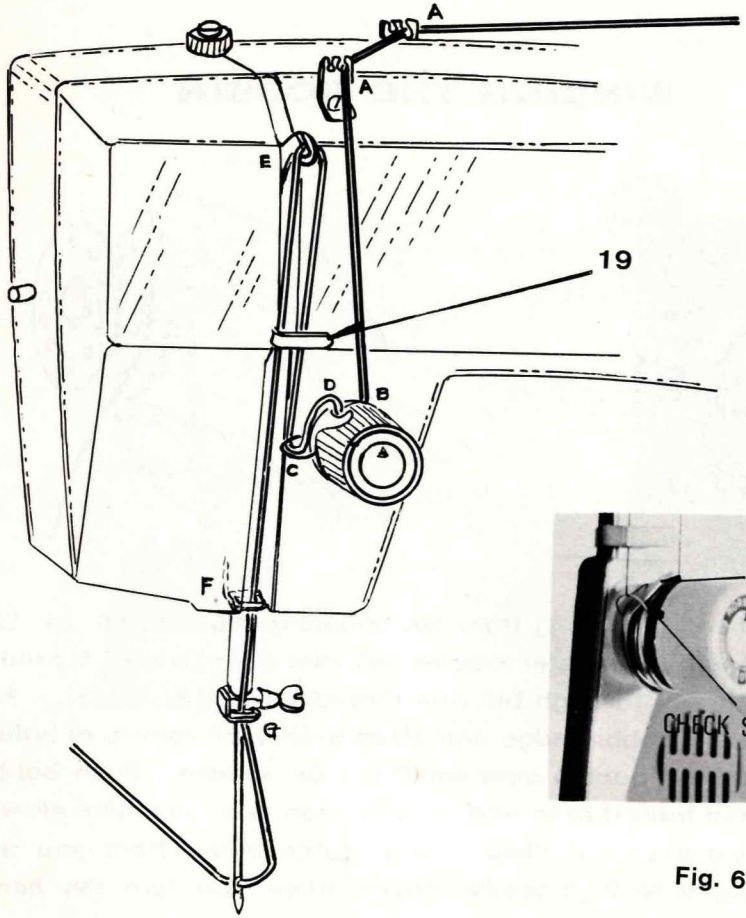


Fig. 5

Disengage the hand wheel (1, Fig. 4) from the stitching mechanism by turning the clutch (2, Fig. 4) toward you or counter clockwise. Place a spool of thread on one of the spool pins and lead thread through the arm thread guide (3, Fig. 3). Run end of thread through a hole in the bobbin edge and place bobbin on spindle of bobbin winder (4, Fig. 3) fitting the notch on bobbin over small pin on spindle. Push bobbin winder (5, Fig. 3) to the right, and hold thread end loosely then start machine slowly.

Bobbin will stop winding when it is filled. Turn clutch away from you until sewing mechanism is again engaged so that needle moves when you turn the hand wheel. Break off loose thread end used to start the winding.



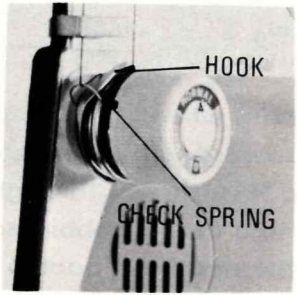


Fig. 6

UPPER THREADING

1. Turn the hand wheel toward you to raise the take-up lever to its highest position.
2. Place a spool of thread on the spool pin.
3. Lead the thread through the upper arm thread guides.
4. Down and between tension discs from Right to Left.
5. Draw the thread up through the check spring and with a slight tug into the hook, (See insert, Fig. 6)
6. Then up through the eye of the take-up lever from right to left.
7. Lead thread down, through the thread guide 19 and face plate guides then through the needle bar guide.
8. Thread needle from front to back, drawing it through about 3 or 4 inches. Hold the end of the upper thread loosely and turn the hand wheel toward you until the needle goes all the way down and comes back up. A loop (Fig. 7) will be formed over the upper thread which then can be pulled out straight. Place both thread ends under the presser foot and draw toward the back of the machine, leaving both threads three or four inches long.

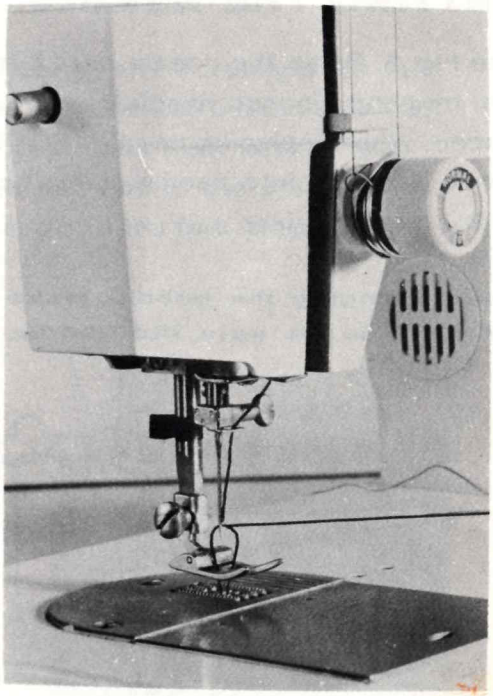


Fig. 7

SETTING THE NEEDLE

See Fig. 8. Raise the needle bar (A) to its highest point, by turning hand wheel toward you by hand. Loosen needle clamp screw (B) and then needle can be removed or replaced. When replacing needle (Flat Side to BACK) in needle clamp push it upward as far as it will go into needle clamp hole. Tighten the Needle clamp screw (B) securely with a screw driver.

After changing the needle, make one complete revolution of the hand wheel by hand to be sure the needle is in the correct position.

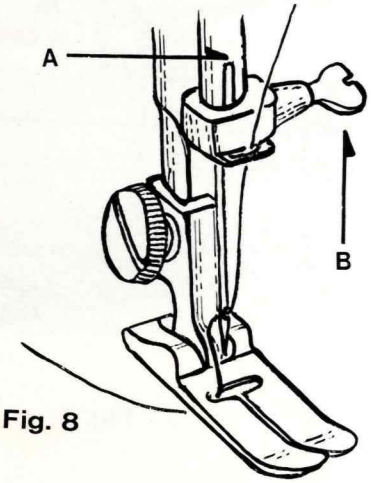


Fig. 8

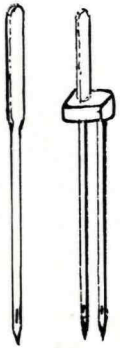


Fig. 8-A

THREADING THE BOBBIN CASE

Step 1 (illustrated in Fig. 9). Hold bobbin case between thumb and forefinger of left hand, so that the slot in the edge of the bobbin case is on top, take the bobbin between thumb and forefinger of right hand so that the thread on top leads from left to right.

Step 2. Insert bobbin into bobbin case, pull the thread into the slot of the bobbin case as shown in Fig. 10, and draw it under the tension spring and into the fork-shaped opening of the spring as shown in Fig. 11.

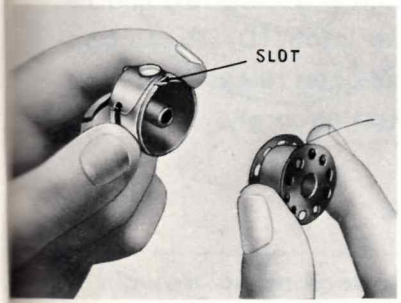


Fig. 9

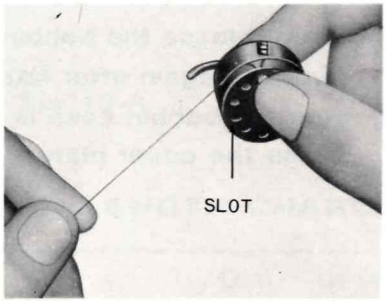


Fig. 10

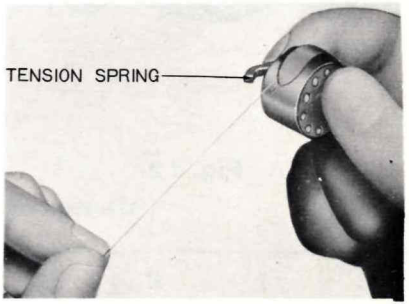


Fig. 11

PLACING BOBBIN CASE

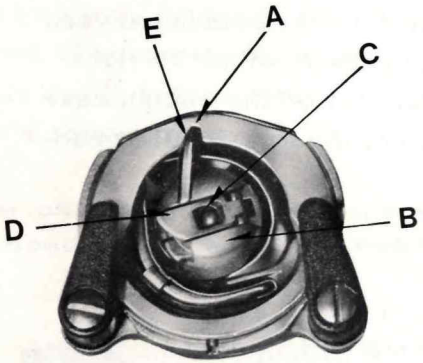


Fig. 12

Raise needle bar to highest position, and lift hinged cover plate. (See 1 7Fig. 1) Hold the bobbin case latch (D, Fig. 12), between the thumb and forefinger of the left hand, with at least three inches of thread running from the top of the bobbin case to the right. Insert and center the bobbin case on the stud of the shuttle body, (C). Be sure the bobbin case finger (E) is opposite the shuttle race notch, (A). Press the bobbin case (B) into the shuttle as far as possible until latch catches on the center post of the shuttle. Then release the bobbin case latch, (D). Press bobbin case again after latch has been released to make sure the bobbin case is locked securely.

Close the cover plate.

SETTING THE STITCH LENGTH

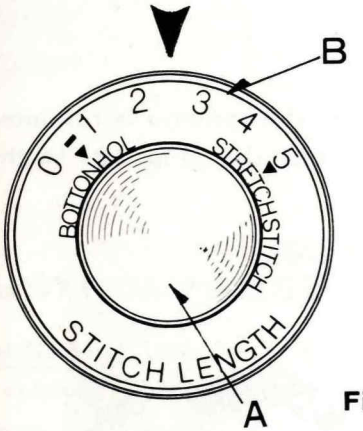


Fig. 13-A

The length of the stitch is regulated by the dial B shown in Fig. 13-A. Near O is the shortest stitch and 5 is the longest, but the control may be set at any spot between the markings for a variety of lengths. Turn the dial to the right to lengthen and to the left to shorten the stitch. The number stitch length you choose appears over the indicator.

STITCH LENGTH CHART (Approximate)

Figures on indicator	O	1	2	3	4	5
Number of stitches per inch	No Feeding	30	25	15	8	6

SEWING IN REVERSE

When you wish to sew backward to tie the threads at the beginning or end of a seam, press in the button (Fig. 13A) as far as it will go. The machine will sew backward as long as the lever is held down.

ADJUSTING THE TENSIONS

Always adjust the upper tension with the presser foot down, as the tension is released when it is raised. To increase the tension on the upper thread, turn dial (Fig. 13) to the right. To decrease, turn to the left.

Before adjusting lower tension be sure that the machine is threaded properly. When necessary to change the bobbin tension, turn small screw (Fig. 14) on side of the bobbin case clockwise to tighten, counter-clockwise to loosen.

When the upper tensions are properly balanced, a perfect stitch will be formed with both threads interlocking in fabric (Fig. 15).

When the upper tension is too tight, the lower thread is pulled up over the upper thread which is lying flat on the fabric (Fig. 16). When the upper tension is too loose, the upper thread forms loops over the lower thread lying flat on the fabric (Fig. 17).

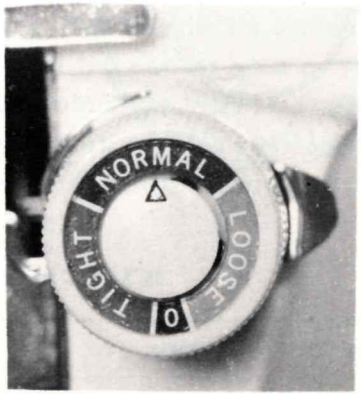


Fig. 13

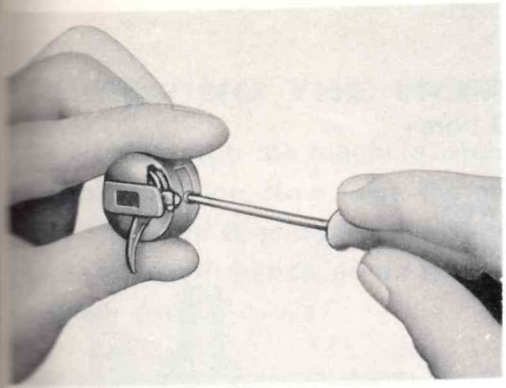


Fig. 14

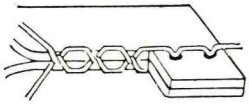


Fig. 15

Fig. 16

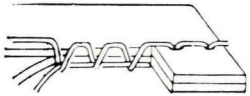


Fig. 17

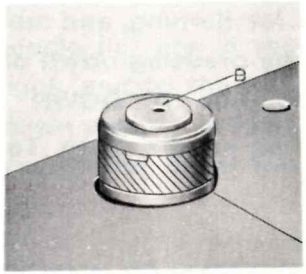


Fig. 18

ADJUSTING PRESSURE AND FEEDING OF FABRIC

General Sewing. Usually for normal sewing the pressure bar cap or darner release, (B, Fig. 18) is at its lowest position and the drop feed knob is turned to "High" position, Fig. 19.

Sewing Thin or Light Weight Fabrics. When lighter pressure is required to sew satisfactorily on thin silk or flimsy material, the pressure cap should be about halfway down. Release all the way by pressing the snap lock, (A, Fig. 20), and then press cap (B) down again to halfway spot. Lower the feed slightly by turning the black dot on the knob to "Low" position.

Fig. 19

Darning and Mending. in order to move the fabric freely in any direction for darning, and mending, release the pressure cap B completely by pressing down on the snap lock, (A, Fig. 20).
Turn the knob to "DOWN" position, which drops the feed well below the needle plate. To return feed to normal, return knob to "HIGH"

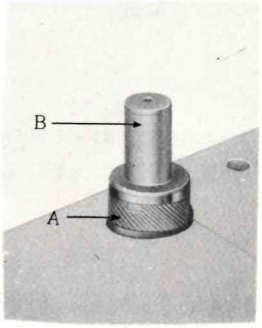


Fig. 20

PREPARING TO SEW

Have take-up lever at highest point before starting to sew. Do not try to help the feeding by pulling the material as this may deflect the needle and cause it to break.
NEVER run machine without material under the presser foot.
Place material and threads in position under the presser foot and lower the presser foot.
Turn the hand wheel toward you until the needle is at its highest point. You are now ready to begin sewing. By having the needle at its highest point, it is not necessary to touch the hand wheel to start the machine. You merely press the control. The speed of the machine is regulated by increasing or decreasig the amount of pressure exerted on the control.

REMOVING THE WORK

Be sure to stop the machine when the thread take-up lever and needle bar are at the highest position. Now raise the presser foot and draw the fabric back and to the left, Fig. 21-A and B, and pass the threads over the thread cutter. Pull down slightly, holding thread in both hands, so as not to bend the needle. Leave the ends of thread under the presser foot.

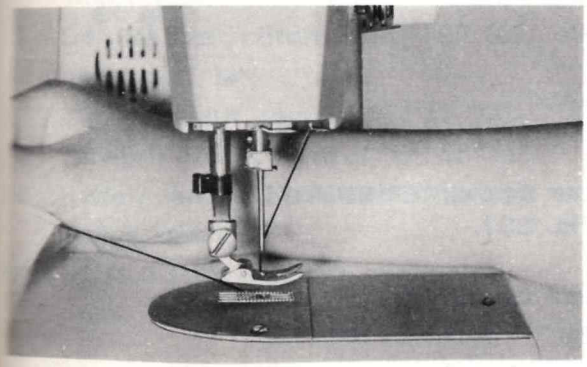


Fig. 21-A

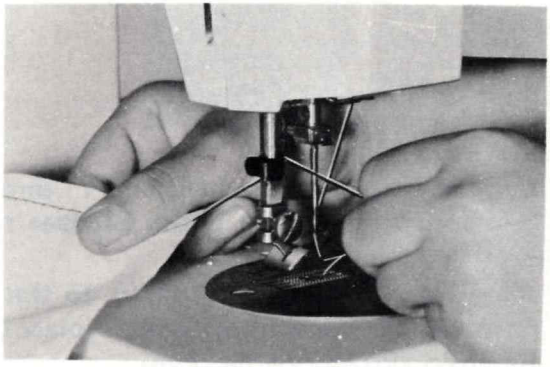


Fig. 21-B

STRAIGHT STITCHING

For straight sewing on fine fabric or very soft material, it is advisable to use the straight stitch presser foot and the straight stitch needle plate which are included in your accessory box. Both have narrow needle slots.

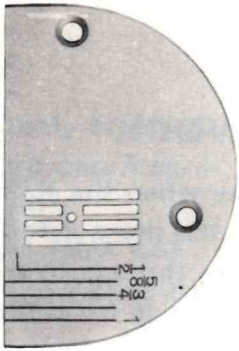


Fig. 22

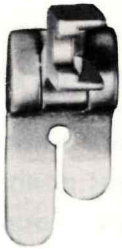


Fig. 23

CHANGE AS FOLLOWS

(1) Presser Foot

(A) Loosen thumb screw (18, Fig. 1) and remove zigzag presser foot.

(B) Replace with straight stitch presser foot (Fig. 23).

(2) Needle Plate

(A) Slide cover plate (16, Fig. 1) to the front as far as possible.

(B) Remove screws holding needle plate (15, Fig. 1) to bed plate.

(C) Remove zigzag needle plate.

(D) Replace with straight stitch needle plate (Fig. 22)

(E) Set needle position control at C.

Be sure to set the stitch width at 0 or the needle will break in striking the foot or plate.

When using the straight stitch needle plate and foot, be sure to make the following setting before starting to sew or the needle will break in striking the foot or needle plate.

Set Your Machine as Follows

(1) Needle posititon control "A" Fig. 24 at C (center).

(2) Decorative stitch dial "B" for straight stitching. "M".

(3) Zigzag width control "C" at "O".

(4) Stretch stitch control "D" at "M".

(5) Stitch length control "E" to suit material being sewn.

See page 13 for stitches per inch.

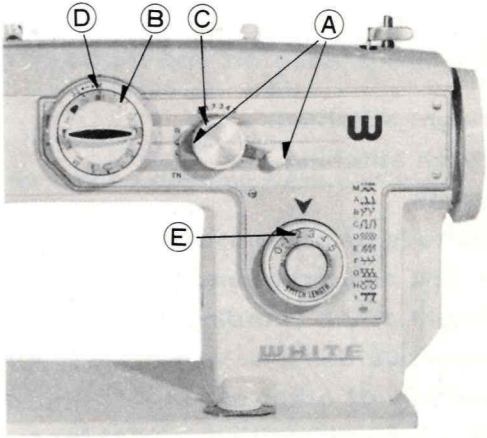


Fig. 24

SETTING NEEDLE POSITION

The needle bar should be at its highest point when adjusting needle position to avoid tearing the fabric or bending the needle.

Select needle position by control, 5 Fig. 25-A.

"R" indicates the right hand position - "C" center and "L" left.

The "C" position is where most of your work will be done.

Straight stitching.

Stretch stitching.

Designs.

Hundreds of other uses.

The left and right hand position can be used for :

Straight stitch (cording and so forth)

Decorative designs.

Hundreds of other uses.

The left hand position is best for sewing on buttons.

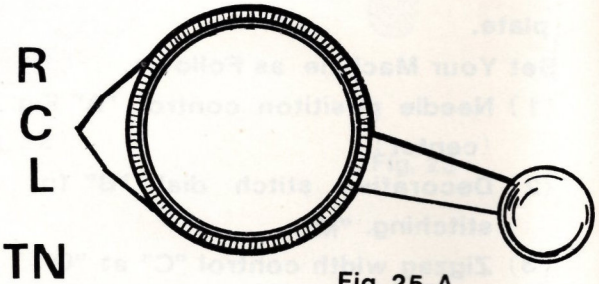


Fig. 25-A

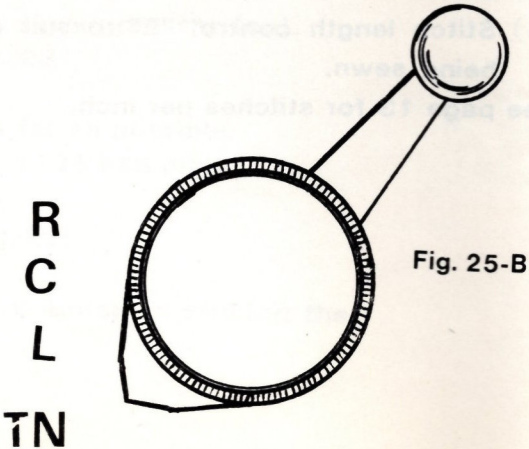


Fig. 25-B

TWIN NEEDLES UPPER THREADING AND SEWING

1. Be sure zigzag needle plate and presser foot are in place.

2. Set needle position control 5 Fig.-25B at twin needle position. This will set a stop to prevent the zigzag width control moving beyond the number 3 position.

3. Follow threading instructions for single needle with these exceptions:
   a. place two spools of thread, matching or contrasting in color, one on each spool pin.
   b. Lead both threads through arm thread guides.
   c. Bring threads down and around tension discs with one thread passing between the back discs and the other between the front discs.
   Now treat both threads as one until you reach the needle eye.
   d. Pass one thread through each needle eye (Fig. 26).

4. The maximum zigzag stitch width that can be sewn when using twin needle is at the number 3 setting of the zigzag width control.
   Any position above the number 3 position will break the twin needle.

5. Straight stitching and decorative stitch designs can be produced in the same manner as for single needle sewing except for the maximum zigzag width.

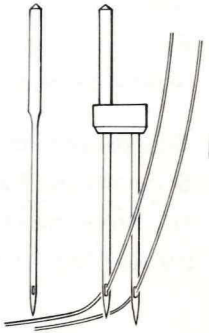


Fig. 26

SAMPLES OF CREATIVE EMBROIDERY (Fig. 28)

"A" Sew a few stitches at 5 width then allow knob to spring back to O for a short period. Count, if necessary, to establish a rhythm.

"B" Set zigzag width control at the second line then move the control slowly back and forth between the Stop and Number 5.

"C" Set zigzag width at the first line. Gradually move the control from the Stop to 5 allowing it to snap back quickly.

"D" Set zigzag width at 5, stitch length at 2. Sew a few zigzag stitches. Drop feed (F, Fig. 24) for 3 or 4 stitches then raise it again. By operating the drop feed knob rhythmically it is not necessary to count stitches.
By changing the needle position and varying the movement of the controls, hundreds of designs can be produced.

"E" Set drop feed knob at Down position and lock zigzag width control at the number 5 position. Take 3 or 4 stitches, leave needle in fabric and pivot fabric on needle to make next daisy petal. Continue until flower design is completed. Lock threads by setting stitch width at O and sewing 3 or 4 stitches in center of design.

CREATIVE EMBROIDERY

Be sure zigzag presser foot and zigzag needle plate are in place.

1. Set decorative stitch control (B, Fig. 24) at "M" position.
2. Set needle position control at "L" position.
3. With the zigzag width control (C, Fig. 24) set at the Number 5 and stitch length control (E, Fig. 24) as near 0 as possible without stopping the feeding action, a satin stitch is produced (Fig. 27)
4. With the machine set for a short stitch length, different designs can be made by turning the zigzag width control back and forth between 0 and 5 or any other combinations of widths. Try setting the zigzag width control at (C, Fig. 24) the first line and the various other lines.

Fig. 27

Set a rhythm for yourself and then proceed. After a while you will become quite skillful, varying your designs by the speed of the machine, stitch length and manipulation of the zigzag width control.

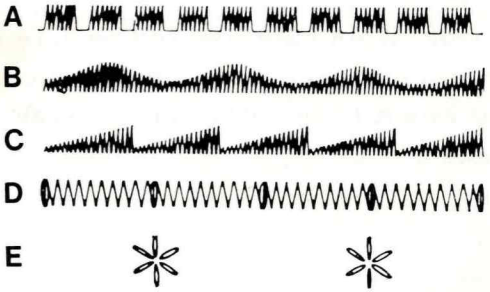


Fig. 28

EMBROIDERING WITH A HOOP

It is easy to follow a stamped design or to work free hand when embroidering or monogramming. (See Fig. 29) Release the pressure from the foot by pressing down the snap lock on the darner. Turn the drop feed knob to "DOWN" position.

Stretch the fabric in an embroidery hoop, and place under the needle after removing the presser foot. Set the stitch width at the size you prefer and lower the presser bar lifter. Then operate the machine at a rather high speed while moving the hoop slowly with both hands. Work carefully and be sure to keep fingers out of the path of the needle. Should you encounter skip stitches the fabric is not stretched tight enough or a darning spring is needed (see attachments available from your dealer illustrated in the back of this book).

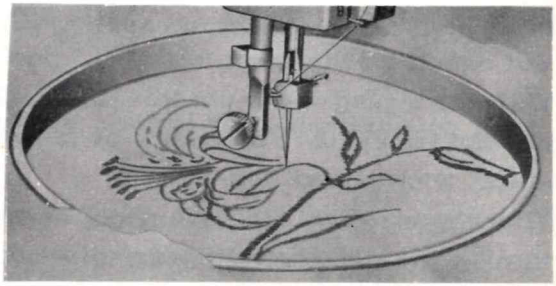


Fig. 29

BUTTONHOLES

Various widths and lengths can be made automatically by turning the dial (C, Fig. 24)
To establish the correct length buttonhole required add ⅛ inch to the cutting space for bar tacks.
To obtain the length of the cutting space, the opening through which the button passes, is measured by adding the width (A) and thickness (B) of the button (Fig. 32).
The width of the buttonhole sides are governed by the material used. Set zigzag stitch width control on number 5 for thick material and a lower number for thin material.
Mark the beginning and end of the buttonhole on fabric with a basting line or tailor's chalk. Make one on scrap fabric following directions below to be sure machine adjustments are corrrect.

1. Replace presser foot with special purpose buttonhole foot. This provides maximum visibility and allows closely spaced stitches to feed evenly (Fig. 31).
2. Set needle in left position
3. Set zigzag stitch width control (C, Fig. 24) to suit material being sewn or width of buttonhole desired (number 5 for the widest buttonhole).
4. Set stitch length control (E, Fig. 24) as close to 0 as possible without stopping the feeding action.
5. Set stretch stitch control at manual position.

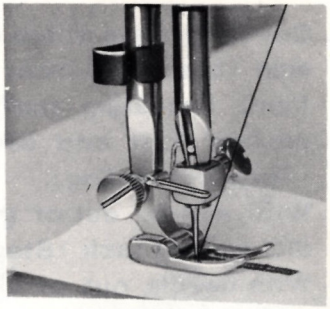


Fig. 30

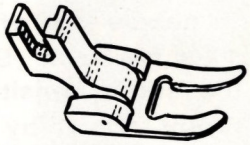


Fig. 31

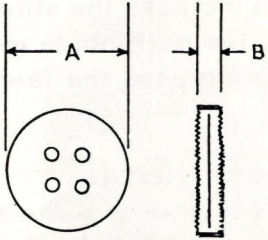


Fig. 32

6. Set decorative stitch dial (A, Fig. 34) to sew the left side (Step 1). Lower needle carefully into mark on fabric indicating the end of the buttonhole. Lower presser foot and sew entire length of buttonhole (Forward feeding).
7. With needle out of the cloth, set decorative stitch dial for bar tack (Step 2). Sew 4 or 5 stitches.
8. With needle out of cloth, set decorative stitch dial to sew right side of the buttonhole (Step 3). This will reverse the feeding motion.
9. With needle out of the cloth, set decorative stitch dial for bar tack (Step 4). Sew 4 or 5 stitches.
10. If the stitch density on the buttonhole sides are different adjust by moving lever ("B" Fig. 34) to either the right (−) or left (+).
    To increase the stitch density on the right hand side of the buttonhole move lever "B" to the right (−).
    To increase the feeding move "B" to the left (+).

PLEASE NOTE:

If you plan to make buttonholes on sheer or soft material, place tartan or paper under fabric which can be torn away after stitching.

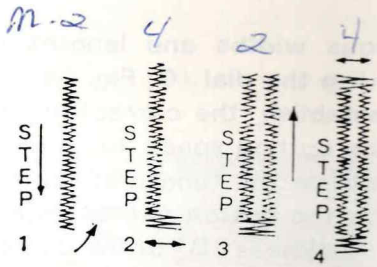


Fig. 33

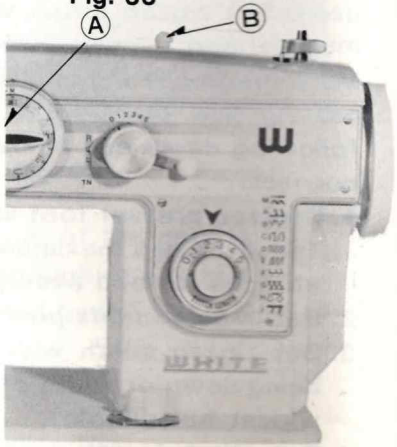


Fig. 34

SEWING ON BUTTONS

1. Remove presser foot and replace with special purpose button sewing foot (Fig. 36)
2. Turn drop feed knob to "DOWN" position (Fig. 35)
3. Set zigzag width control at "0"
4. Set needle position control at "L" and decorative stitch dial at "M" Place the button so that its left hole comes directly under the presser foot.
5. Set the zigzag width control to produce a zigzag stitch until the needle enters the right hand hole of the button. Turn the balance wheel slowly by hand to be sure the needle clears both holes in the button. Correct width if necessary.
6. When needle goes into the center of each hole, run the machine at a medium speed, making five or six stitches, stopping with the needle in the left hole.
7. To lock the zigzag stitch and prevent ravelling, set the zigzag stitch width control to 0 (remembering its original setting), and take a few stitches in the same hole. If you wish, you may place a rounded toothpick over the button between the two holes, and sew button to fabric in the regular way. Remove the toothpick and wind thread under button forming a shank to fasten.

Fig. 35

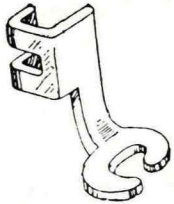


Fig. 36

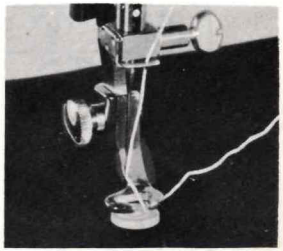


Fig. 37

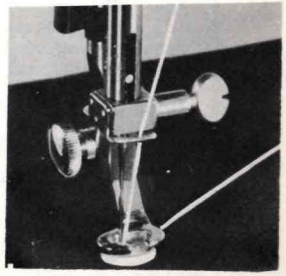


Fig. 38

STRETCH STITCH

Patterns	Needle Position	Stitch Length	Zigzag Width	Stretch Patterns	Needle Position	Stitch Length	Zigzag Width
	C	1～5	0		C	5	0
	LCR	0.5～5	1～5		LCR	〃	1～5
	〃	0.5～3	〃		〃	〃	〃
	〃	0.5～5	〃				
	〃	〃	〃				
	〃	〃	〃				
	〃	0.5～3	〃		LCR	5	1～5
	〃	〃	〃		〃	〃	〃
	〃	〃	〃		〃	〃	〃
	〃	〃	〃		〃	〃	〃
	〃	〃	〃		〃	〃	〃
	〃	〃	〃		〃	〃	〃
	〃	〃	〃		〃	〃	〃
	〃	〃	〃		〃	〃	〃

When sewing at the stretch stitching, be sure to set the stretch lever (22, Fig. 1) in "SS" position with red indicator on top cover.

MULTIPLE ZIGZAG STITCH

Fig. 40

A. Use zigzag needle plate and presser foot.

B. Set stitch length control to suit-Number 5 for the longest stitch.

C. Set decorative stitch dial at multiple zigzag stitch.

D. Set zigzag width control at Number 5 for widest stitch.

USE:

When replacing worn blanket bindings for both a decorative and durable finish. Fig. 41.

When overcasting an edge to prevent fraying.

When applying elastic waist bands to skirts and dresses be sure to stretch the elastic as it is applied to insure fullness required in the garment.

When sewing a zigzag stitch on soft or sheer material it will prevent puckering.

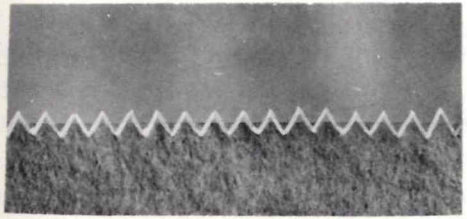


Fig. 41

There are hundreds of other uses which will become apparent as you use the machine.

Use I

BLIND STITCH HEM

Use standard zigzag foot (Fig. 42).

Set stitch length control at number 3 or 4.

Needle position control at "Center" position.

Zigzag stitch width to suit material being sewn.

The lower the number, the smaller the sidewise stitch.

Blind stitch hems provide a durable hem finish that is almost invisible and comparable to hand sewing.

Prepare the garment in the same manner as for hand hemming.

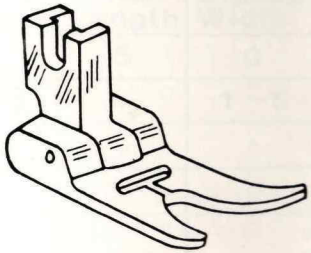


Fig. 42

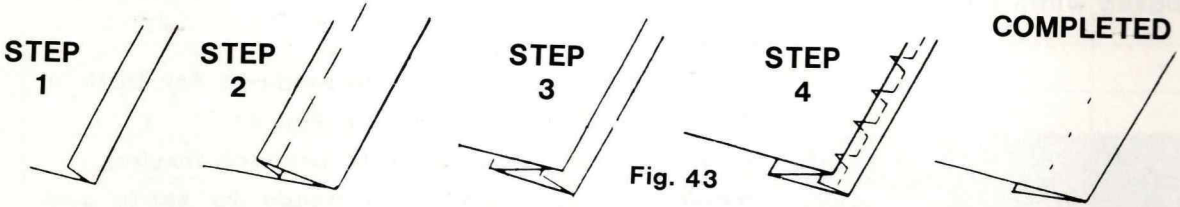


Fig. 43

Step 1. (Fig. 43). If hem with folded edge is used make first fold 3/8" deep.

Step 2. Turn hem to the depth desired and baste 1/4" from upper edge. Press in place.

Step 3. Fold hem back toward right side of garment leaving 1/4" extended.

Step 4. Place material under presser foot, sew with stitch length set to suit material being sewn and make a side wise stitch about every 3/4" of an inch of sewing.

MANUAL OPERATION

Be sure standard zigzag presser foot and zigzag needle plate are in place and machine is set for manual operation. Use for:

OVERCASTING WORN EDGES

Zigzag stitch along the worn edges, catching the fabric as the needle swings to the left, and allowing the needle to just pass over the edge of the fabric on the right (Fig. 45).

PATCHING

Machine bastes patch into place by placing fabric under hole or worn area which has been cut away. Then zigzag stitch the patch into place by overcasting around edge of hole.

APPLIQUE

Fig. 44-Baste design to fabric and zigzag stitch following the shape of the design outlining it entirely and remove excess material on the outer edge by trimming it away after stitching.

Fig. 46-Baste design to fabric and overcast a zigzag stitch around the design outlining it entirely.

Hundred of others uses will become apparent as you continue to use the machine. Try the mulitple zigzag stitch for these operations. Also, for best result set speed control slower when sewing around contours and faster for straight lines.

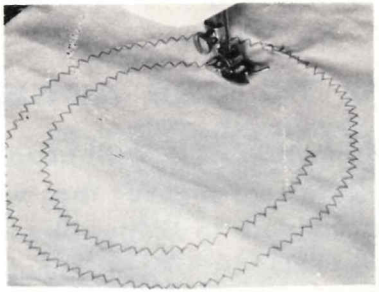


Fig. 44

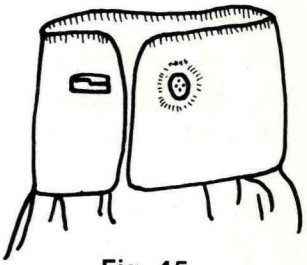


Fig. 45

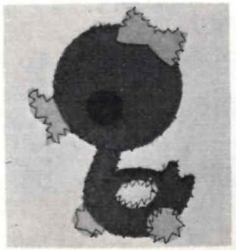


Fig. 46

HOW TO USE ACCESSORIES

NARROW HEMMER: With needle at its highest position replace regular presser foot with narrow hemmer (Fig. 47) being sure to tighten it securely in place. Set pattern selector dial at manual position, needle positioning control center, zigzag stitch width control at off for straight stitched hem or at number 3 for zigzag stitched hem. Set stitch length control to suit.

For a plain narrow hem make a 1/8 inch double fold for about two inches along edge of fabric. Hold each end of the two inch fold and slip underneath hemmer. Bring fold up into the scroll of HEMMER, draw fabric forward to end and fasten with needle point. Lower presser bar lifter. Gently pull end of thread as you start stitching (Fig. 48 for straight stitched hem Fig. 49 for zigzag stitched hem).

Guide material slightly to left and it will take a double turn through scroll.

The narrow hem provides an excellent finish for edges of ruffles or any other dainty work .

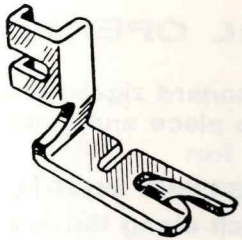


Fig. 47

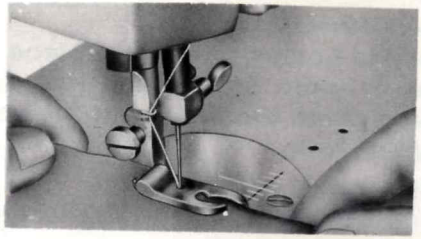


Fig. 48

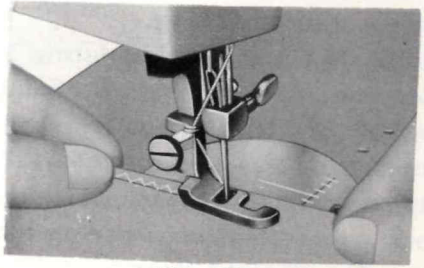


Fig. 49

LACE TRIMMED HEM

To sew a narrow hem and attach lace in one stitching, insert lace in the slot next to needle (Fig. 51), Sew hem as above, guiding lace under needle and hem into scroll. Rickrack may be used in the same way.

LACE EDGE WITH INVISIBLE STITCHING

Hold lace ⅛ inch from raw edge on right hand side of fabric, insert both in scroll as for plain narrow hem (Fig. 52); let hem roll over and sew in lace. When the stitching is completed, the hem is pressed to the wrong side.

FRENCH SEAM

Place material with right sides facing each other and the piece of material ⅛ inch from right hand edge of lower piece. Insert in hemmer scrol allowing hem to roll over and sew in top fabric making French seam. For cording effect, use zigzag stitch wide enough to catch both edges of the narrow rolled hem and sew with satin stitch. This can be used for covering chairs and so forth (Fig. 53).

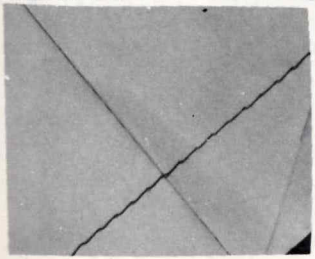


Fig. 50

HEMMING ACROSS A SEAM

To hem across a seam, cut the seam folds at an angle so they will lead into the hemmer gradually. Press seam open. Stitch across the seam at the extreme edge to hold it together and for added firmness. It may be necessary to pull the material slightly when hemming over the seam (Fig. 50).

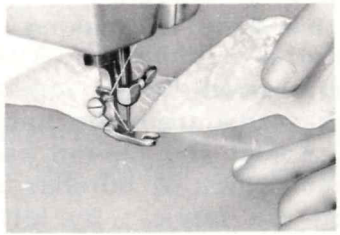


Fig. 51

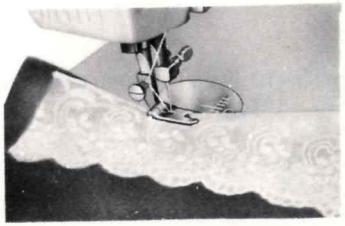


Fig. 52

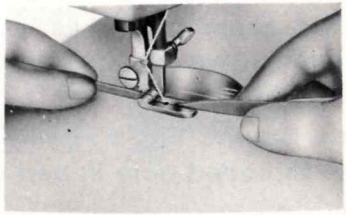


Fig. 53

QUILTING GUIDE

Use this guide for making parallel rows of straight or decorative stitching. Attach standard presser foot. Slip U shaped holder on guide under presser foot thumb screw from the back and tighten screw (Fig. 58). Adjust the curved bar for the distance desired between rows of stitches and set so it presses slightly on the fabric. By letting the guide ride on the previous stitching line, successive rows will be an equal distance apart (Fig. 58).

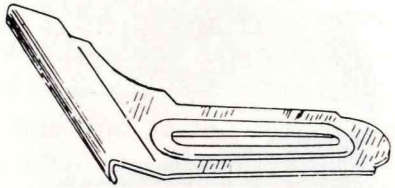


Fig. 55

Fig. 56

SEAM GAUGE OR CLOTH GUIDE

Use the seam gauge as a guide for straight seams and even rows of top stitching along edge of fabric (Fig. 57).

Fasten Gauge (Fig. 55) with accompanying screw (Fig. 56) in threaded hole in bed of machine. Adjust to desired width.

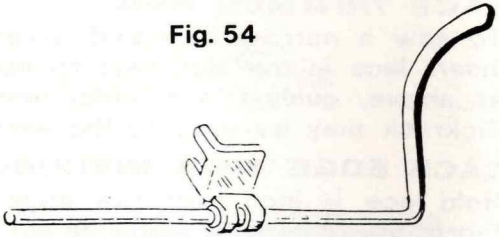


Fig. 54

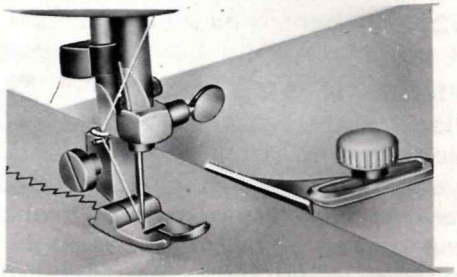


Fig. 57

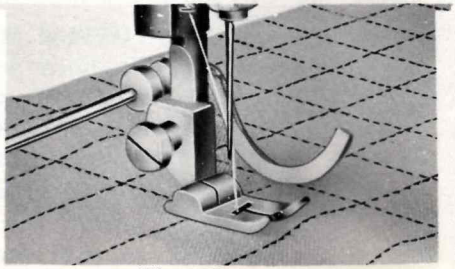


Fig. 58

CLEANING AND OILING THE SHUTTLE

(See Fig. 59 and 60)

The stitch forming mechanism occasionally becomes clogged with loose threads and lint. This will interfere with the efficient operation of the machine. Cleaning and removal of the lint will safeguard the performance. To remove the shuttle assembly, proceed as follows:

1. Turn the balance wheel until the needle reaches its highest position. Tilt head back on its hinges.
2. Remove bobbin case (A), Fig. 59
3. Turn the two shuttle race cover clamps (B) outward and remove the shuttle race cover (C) and shuttle body (D).

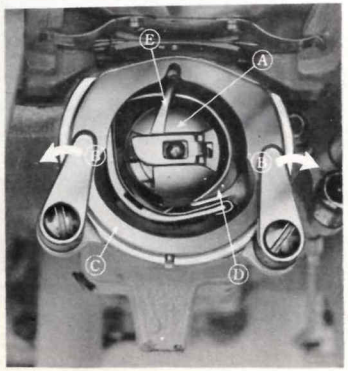


Fig. 59

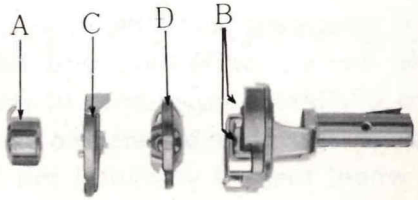


Fig. 60

4. Clean the shuttle race, the shuttle and shuttle race cover by removing all threads, lint, etc.
5. Apply a drop of oil with finger tip to outer edge of shuttle.

When the cleaning has been completed, proceed as follows to replace the shuttle assembly:

1. Turn the balance wheel until the needle reaches its highest position.
2. Place shuttle body, (D), against shuttle driver and adjust into position.
3. Replace shuttle race cover, (C), fitting pin at lower edge into notch, and lock into position with shuttle race cover clamps, (B), making certain the clamps have been snapped securely into position.
4. Put bobbin into bobbin case.

CARE AND MAINTENANCE OF YOUR MACHINE

HOW TO OIL YOUR MACHINE

Your machine should be oiled occasionally to keep it operating smoothly, how often depends on the amount of sewing you do.

Before oiling the upper part of the sewing unit at points indicated by arrows in (Fig. 61) turn hand wheel toward you until the take-up lever is at its lowest point.

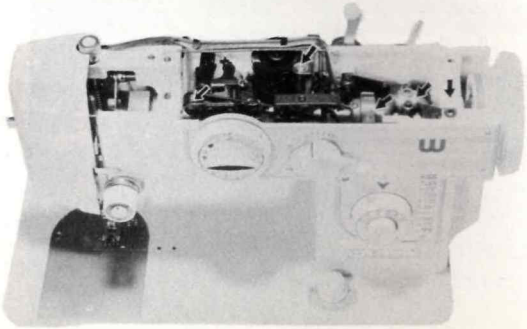


Fig. 61

To oil mechanism under bed of machine, tip the head back on its hinges and oil all moving parts indicated by arrows Figures 62 & 63 and red spots on machine.

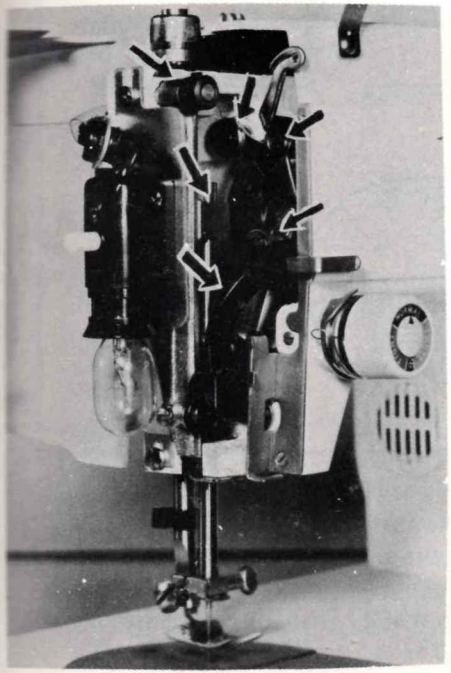


Fig. 62

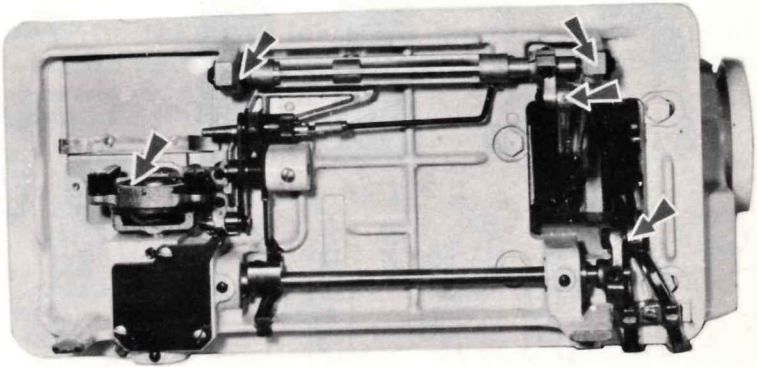
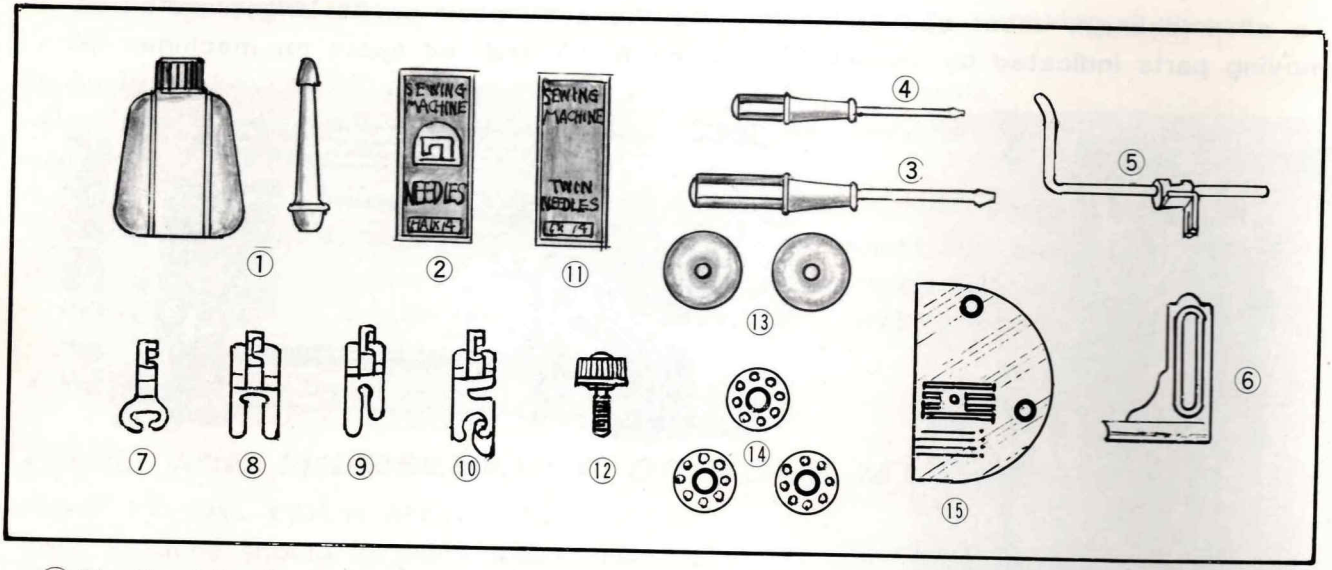


Fig. 63

HOW TO REPLACE THE LIGHT BULB

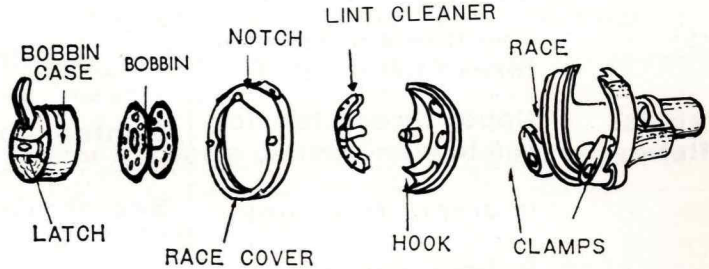
Open Face (Fig. 62). Unscrew bulb and insert new one. For long life and correct size, be sure it is a genuine White part.

ACCESSORIES



① Plastic Oiler (sealed and filled).
② Package of Needles (5 Straight).
③ Large Screw Driver.
④ Small Screw Driver.
⑤ Quilter Guide.
⑥ Cloth Guide.
⑦ Button Sewing Foot.
⑧ Buttonhole Foot.
⑨ Presser Foot for Straight Sewing.
⑩ Narrow Hemmer.
⑪ Twin Needles.
⑫ Thumb Screw.
⑬ Felt Washers(2) (for spool pins).
⑭ Bobbins (3).
⑮ Needle Plate for Straight Sewing.

TROUBLE CHART

Trouble	Probable Cause	Correction
If Machine Binds	Thread or lint in raceway	1—With take-up lever in highest position, tilt head back on hinges and remove bobbin case.  2—Turn clamps outward and remove race cover. 3—Remove hook. 4—Clean thread and lint from all parts, including race. 5—Run a drop of oil along rim of hook. 6—Replace shuttle, then race cover. Snap clamps into place. 7—Grasp threaded bobbin case by latch and replace, fitting tongue into notch of race cover.

Trouble	Probable Cause	Correction
Skipping stitches	Bent needle	Discard and replace.
	Needle placed incorrectly in clamp	See instruction, page 10.
	Too fine a needle for thread being used	See needle and thread chart, page 5.
Irregular stitches	Upper thread tension too loose	Tighten upper tension.
	Improper threading	See threading instruction, page 8 and 9.
	Bobbin not wound evenly	Rewind bobbin.
Uneven stitches	Pulling or holding material	Avoid pulling or holding material, just guide it.
	Not enough tension on upper thread	Increase tension.
	Poor quality thread	Try different thread.
	Needle too fine for thread being used	See needle and thread chart, page 5.

Trouble	Probable Cause	Correction
Upper thread breaking	Improperly threaded	Refer to threading instructions, see page 8 and rethread machine.
	Too much tension	Loosen tension on upper thread by turning thread tension knob to lower number.
	Starting with take up in incorrect position	Always start sewing with take up lever in highest position.
	Improper setting of needle	Refer to needle setting instructions, see page 10.
	Bent or eye of needle too sharp	Try a new needle.
	Bent or blunt needle	Discard all blunt or bent needles and replace with new.
Material puckering	Tensions too tight	See tensions adjustment, page 14.
	Dull needle	Change needle.
	Stitch length too long	Reduce stitch length.

Your sewing machine comes equipped with the basic set of accessories described earlier in this book.

The following pages illustrate additional time saving attachments that have been designed specifically for your machine. They are available at modest cost from your dealer. If your dealer cannot supply you with these items, ask him to order them for you by part number. Then you will be assured of receiving the genuine part designed for best performance with your machine.

If a sewing machine dealer is not available, mail your inquiry directly to:

WHITE SEWING MACHINE COMPANY

11750 BEREA ROAD
CLEVELAND, OHIO 44111

In Canada

WHITE CONSOLIDATED INDUSTRIES, LTD.

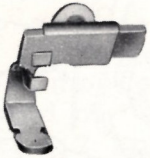
1470 BIRCHMOUNT ROAD
SCARBOROUGH, ONTARIO, CANADA

SOME OF THE ATTACHMENTS AVAILABLE FOR YOUR MACHINE

Fig. 71

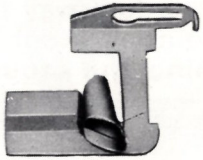
PART #1403
Ruffler

PART #4990
Darning Spring



PART #1873
Cording & Zipper Foot

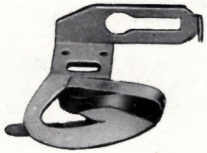
PART #82528
Attachment Foot



PART #74159
Binder

PART #76554
Edgestitcher

Hemmers



7/8
PART #76553

5/8
PART #76552

3/8
PART #76551

1/4
PART #76550

Needle position control must be in the left position when using these attachments.

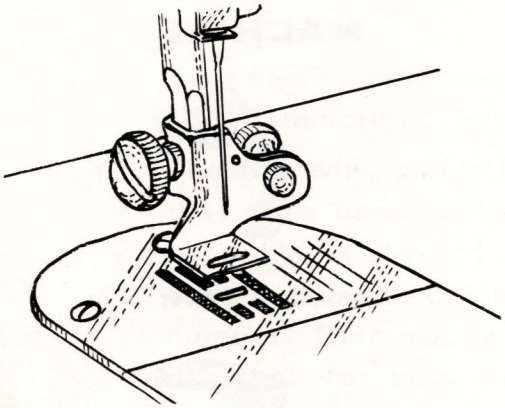


Fig. 64

ATTACHMENT FOOT

In order to attach the binder, edgestitcher and the hemmers, it is necessary to remove the presser foot and replace it with the attachment foot (Fig. 64). Mount binder, edgestitcher or hemmers, sliding the attachment to the left as far as possible and tighten screw.
The mounting slot enables you to sew as close to or as far away from the edge as desired. Just move the attachment to the correct position before tightening the mounting screw.

EDGESTITCHER

The edgestitcher is used in making dainty lace insertions, edgings and pipings.
The slots in the edgesticher serve as guides in sewing together various pieces of material. If you want to sew lace, lace and embroidery, or lace and tucked strips together, place the piece of material that will be on top in slot 1 (Fig. 66) and lower fabric in slot 4. For instance, if you are sewing lace edging to a finished edge of fabric place the fabric in slot 1 and the lace in slot 4 (Fig. 65).

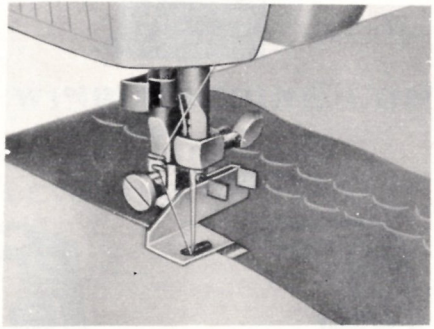


Fig. 65

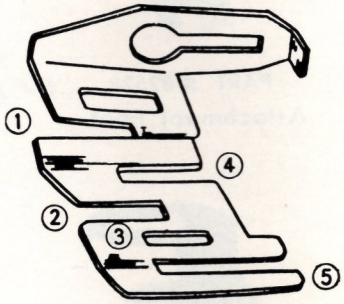


Fig. 66

Be sure to draw the lace and material under the needle and back of the edgestitcher so that the feed will carry it backward as you stitch.
Hold the fabric in the left hand and the lace in the right, being sure the fabric overlaps the lace slightly.
Rick Rack can be sewn to the edge of the material in the same manner.
To trim with wide piping, place the fabric in slot 4, and the fold of the piping to the left in slot 3, for a narrow piping place fabric in slot 2 and the folded edge of the piping to the right in slot 3.
Slot 5 may be used as a guide in stitching a French seam.
See Figs. 67 ~ 70 for suggestions on how to use the edgestitcher. There are hundreds of other uses.

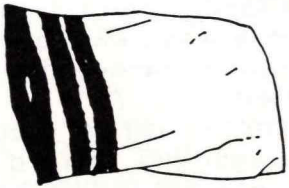


Fig. 67

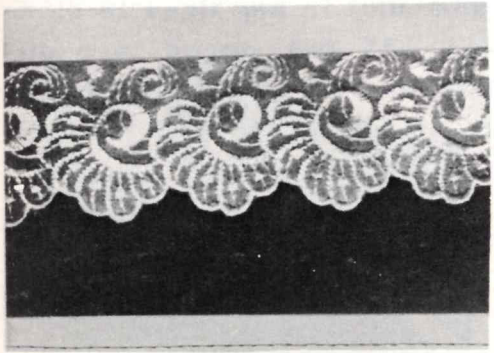


Fig. 68

Fig. 69

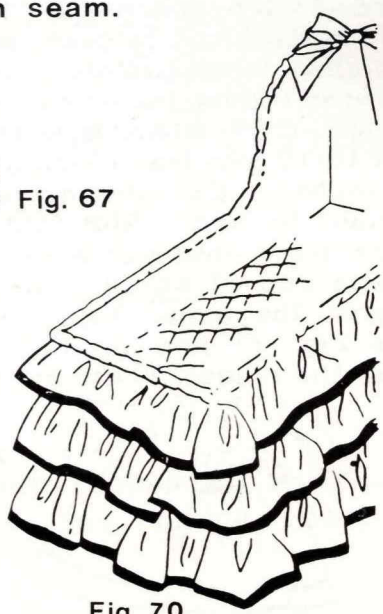


Fig. 70

BINDER

This attachment folds bias binding and applies it to the edge of material in one operation. Slots on scroll of the binder are for corresponding widths of commercially folded bias binding The open mouth of binder scroll is used for unfolded bias strips cut 15/16 inch wide.

FOLDED BINDING (Fig. 73)

Cut a point on folded binding, insert in appropriate slot. Draw through slot and under binder with strong pin. Test stitching to be sure it is on the edge. Adjust by sliding binder to right or left.

TWO-TONE BINDING (Fig. 73)

Two bindings can be sewn on fabric edge also in one operation. When two are used, always skip one size between widths, inserting each in correct size slot.

HAND-CUT BIAS BINDING (Fig. 74)

Cut 15/16 inch bias binding fold in half for a couple of inches. Cut binding (diagonally toward end, almost to fold). Slip fold into center of binder. Draw back until cut opens and binding encircles opens end of scroll. Test stitching to be sure it is on the edge. Adjust if necessary.

See Fig. 71 and 72 for suggestions on how to use the binder. There are hundreds of other uses.

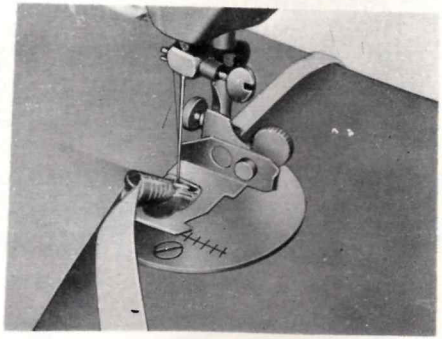


Fig. 73

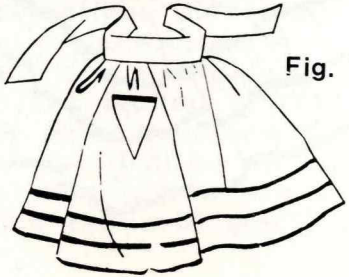


Fig. 71

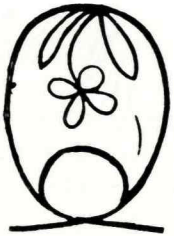


Fig. 72

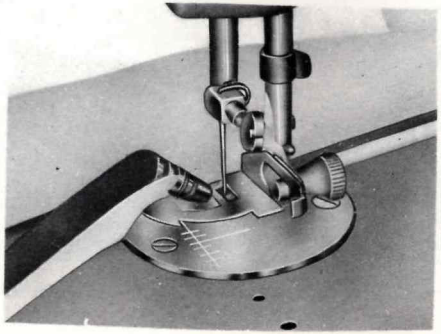


Fig. 74

THE SET OF HEMMERS

Before attaching any of the hemmers, be sure bobbin thread is pulled up. Then, with hemmer in place, hold top thread loosely and turn hand wheel one full turn toward you, making a loop under hemmer. Grasp bobbin thread with both hands and slip horizontally under hemmer toward back. Bobbin thread will catch loop and carry upper thread to back of hemmer.

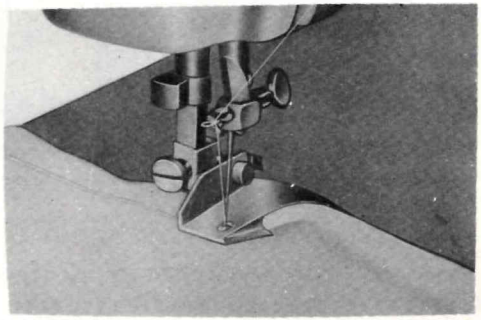


Fig. 75

Fold material to suit for two inches along edge, hold at each end of fold. Slip fold into guide and up over spoon (Fig. 75). Fold hem in material back of hemmer. Draw forward to end of hem and fasten with point of needle. Pull on threads gently as you start stitching.

HEMMER SET

You can make a hem 1/4", 3/8", 5/8", or 7/8 in width, depending upon which hemmer you use. For a few of the many uses see Figs. 84~89.

HEMMER SET

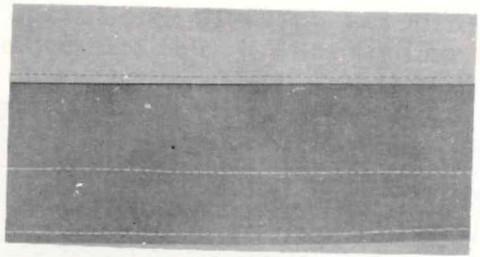


Fig. 76

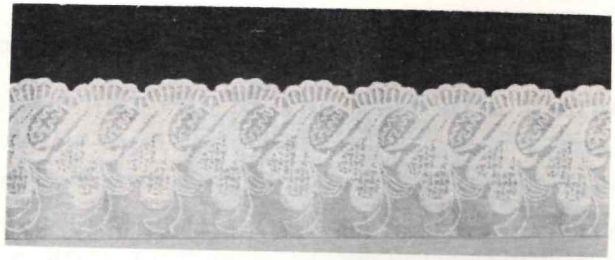


Fig. 77

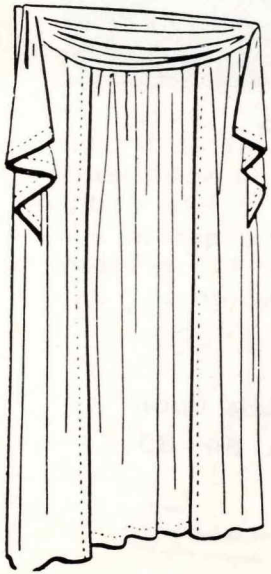


Fig. 78

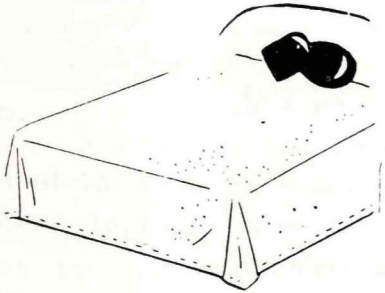


Fig. 79

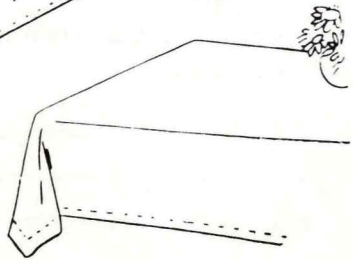


Fig. 80

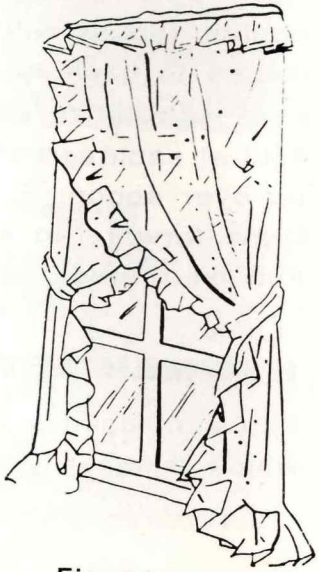


Fig. 81

RUFFLER

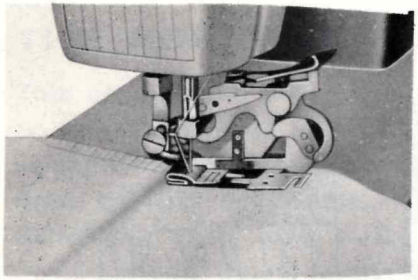


Fig. 82

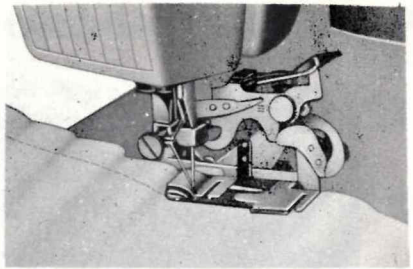


Fig. 83

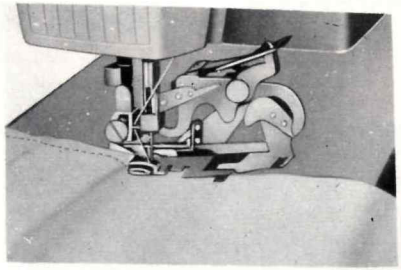


Fig. 84

The ruffler will produce yards of delicate ruffling or precision pleating. Ruffling can also be done and sewn to another piece of fabric at the same time. This highly versatile attachment despite its wide range of use, is simple to use. Use the ruffler for making aprons, curtains, pleating a skirt, adding fullness to the bodice of a dress, etc.

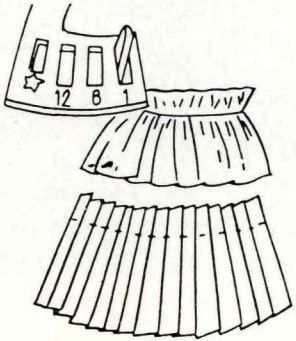


Fig. 82-A

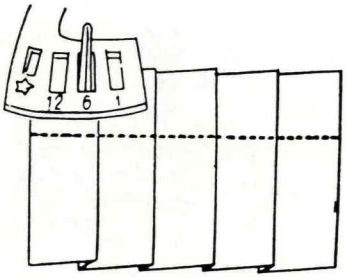


Fig. 83-A

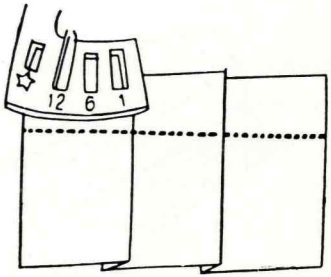


Fig. 84-A

RUFFLER

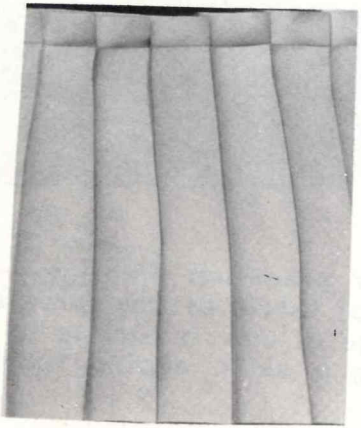


Fig. 85

Fig. 86

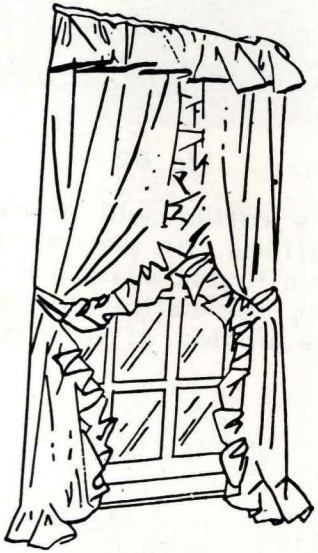


Fig. 89

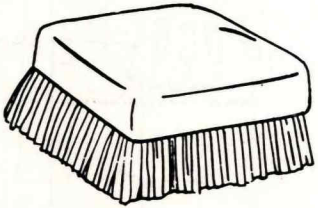


Fig. 87

Fig. 88

THE ADJUSTABLE CORDING AND ZIPPER FOOT

This attachment is used to make and insert covered cording and to sew in zippers. Loosen thumb screw to slide foot to either right or left of needle.

CORDING. Fold bias strip of fabric over cord. Loosen thumb screw and set foot so needle is centered in needle hole. Machine bastes cord in place (Fig. 91).

To sew covered cord to material, reset adjustable foot so needle stitches closer to cord, and on edge of base fabric.

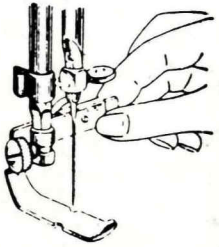


Fig. 90

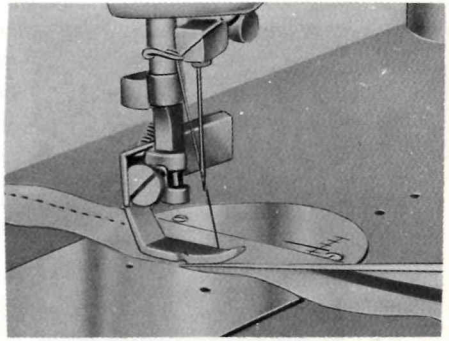


Fig. 91

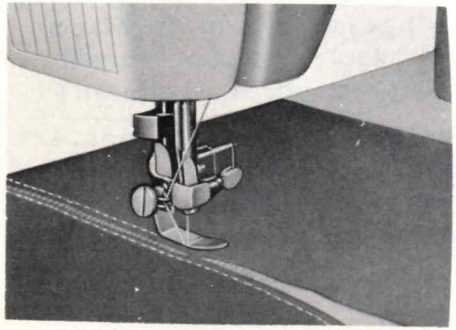


Fig. 92

SEWING IN ZIPPER

Loosen thumb screw and slide foot so needle enters center of needle hole. Guide metal of zipper along edge of foot (Fig. 92). Stitching should be close to zipper to allow easy opening and closing. Adjust to sew from either right or left side, whichever is more convenient.

ADJUSTABLE CORDING AND ZIPPER FOOT

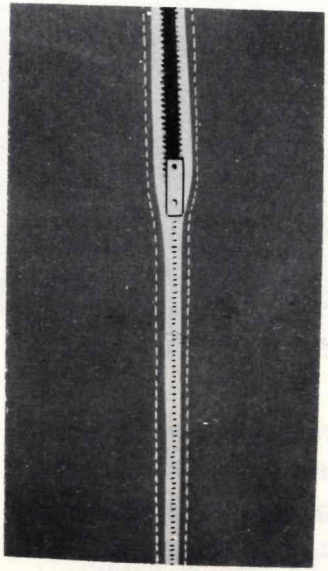


Fig. 93

Fig. 94

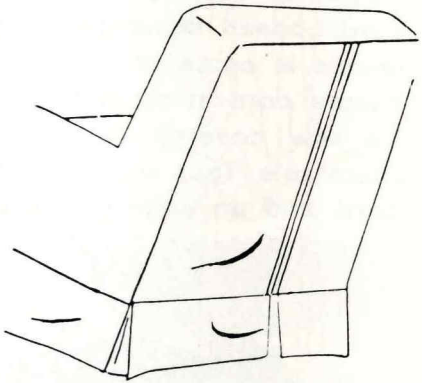


Fig. 95

INSTALLING SEWING HEAD IN PORTABLE CASE

Please read these important instructions which were written to aid you in placing your new sewing machines in its portable case.

First, remove the foot control which is fastened inside the base to avoid damage in shipping. After unpacking the sewing machine unit, being certain to take out the instruction book, guarantee and accessory box, lay the unit face down on a table. You will see two clamping screws A entering head hinge holes B on the underside of the back.

On the base you will find two head hinges C which will fit into holes B. Lower the base onto the sewing machine fitting hinges C into holes B. Tighten screws A securely with a screw driver.

To make the electrical connection draw the two wires through the slot in the partition of the base. Plug the cord labeled "Motor" into the receptacle marked "Motor" on the block attached to the outer section of the base.
Then insert the other cord into the "Light" receptacle.

Place the foot control on the floor, insert plug into a wall outlet (110-115 volts) and you are ready to sew. But first read the instruction book to become familiar with the threading of the machine, tension adjustments and all the other features designed to make sewing a pleasure.

See Fig. 96 and 97 (P.54)

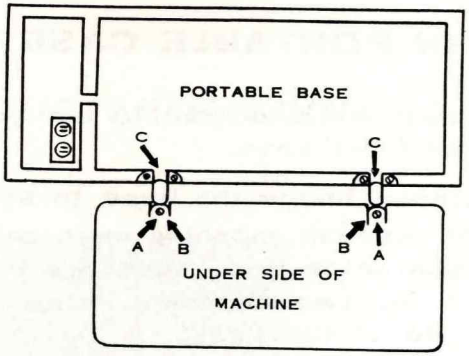


Fig. 96

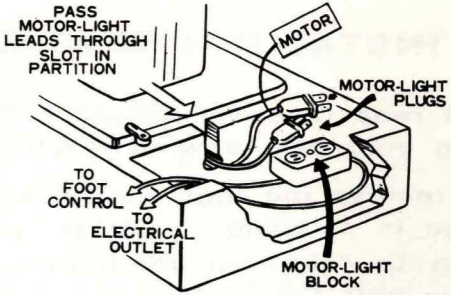


Fig. 97

TO ASSEMBLE LEGS ON CABINETS

See Fig. 98

1. Place cabinet body upside down on smooth level surface (use packing material as cushion to prevent marking top.)
2. Slip leg into position between corner blocks and down as far as it will go with stud fitting into slot or hole in metal bracket.
3. Add wing nut and tighten securely.

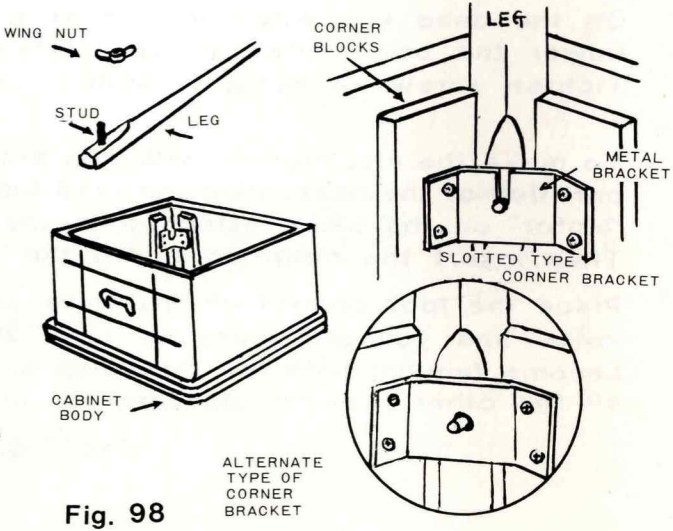


Fig. 98

INSTALLING SEWING HEAD IN CABINET

1. Back off both head hinge set screws until head hinge hole is clear.
2. Tilt head hinge tongues up and back as far as they will go.
3. Carefully slip head onto head hinges -- making sure tongues are inserted as far as they can go into head hinge holes.
4. Allow the head to rest in its tilted-back position.
5. Tighten both set screws securely with screw driver.
6. Plug electrical leads into sockets located inside cabinet. Cord identified with "motor" tag must be plugged into socket marked "motor". Untagged cord goes to "light" socket.

See Fig. 99

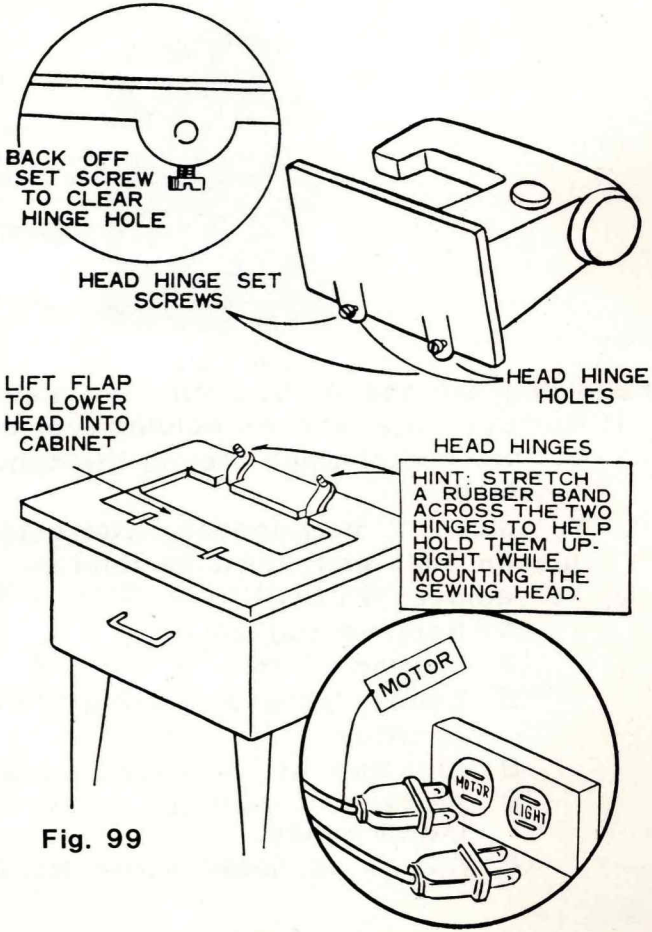


Fig. 99

ADJUSTING AND CHANGING "V" BELT

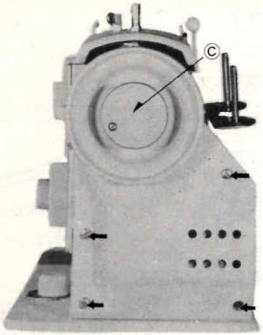


Fig. 100

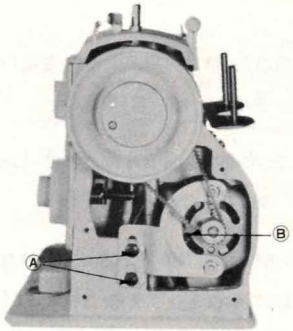


Fig. 101

Following are the instructions for adjusting and changing the "V" belt:

(1) Remove four screws holding rear cover (Fig.100) by tipping it out at the bottom and pivoting around the hand wheel away from the front of the machine.

(2) To adjust "V" belt, loosen screws (A, Fig, 101) and move bracket B up to loosen belt and down to tighten.

(3) To remove "V" belt:

- (A) Remove top cover.
- (B) Loosen clutch (C, Fig.100)
- (C) Loosen screws "A" (Fig.101) and move bracket "B" to its highest position.
- (D) Slip belt off motor pulley and then over hand wheel.
- (E) Replace "V" belt by slipping it over hand wheel and then over motor pulley.
- (F) Adjust as noted under No. 2.

WHITE sewing machines

SINCE 1876

TO OBTAIN THE BEST PERFORMANCE FROM YOUR MACHINE BE SURE THE CABINET, CARRYING CASE OR OTHER ITEMS USED WITH YOUR MACHINE ARE GENUINE WHITE PRODUCTS.

Printed in Japan